

CLAIMS

What is claimed is:

1. An actuator of a hard disk drive, having a base plate and a voice coil motor, to move a magnetic head to record and reproduce data with respect to a disk to a predetermined position on the disk, comprising:

a suspension supporting a slider where the magnetic head is mounted; and

an arm included on the base plate of the hard disk drive to pivot, the arm including the suspension at a leading end portion of the arm and a coil of the voice coil motor coupled to a rear end portion of the arm,

wherein the coil is coupled to the rear end portion of the arm by an outer mold formed to encompass an outer circumference of the coil, an inner mold formed inside the coil, and a connection mold connecting the outer mold and the inner mold is formed at least part of a surface of a non-effective portion of the coil except for an effective portion arranged to be perpendicular to a direction in which the arm pivots.

2. The actuator as claimed in claim 1, wherein the connection mold is formed at an entire surface of the non-effective portion of the coil.

3. The actuator as claimed in claim 1, wherein the connection mold is formed in a middle portion along a lengthwise direction of the non-effective portion of the coil.

4. The actuator as claimed in claim 1, wherein the connection mold is formed at at least two positions along a lengthwise direction of the non-effective portion of the coil.

5. The actuator as claimed in claim 1, wherein the connection mold is formed on an upper surface and a lower surface of the non-effective portion of the coil.

6. A hard disk drive that reproduces data stored in a disk or records data on the disk by using a magnetic head, the hard disk drive comprising:

an actuator including an arm included on a base plate of the hard disk drive to pivot and a suspension at a leading end portion of the arm and supporting a slider on which the magnetic head is mounted; and

a voice coil motor including a coil coupled to a rear end portion of the arm and a magnet arranged to be separated a predetermined distance from the coil and to face at least one of upper and lower surfaces of the coil, and pivoting the actuator in a predetermined direction by the interaction between current flowing through the coil and a magnetic field formed by the magnet,

wherein the coil is coupled to the rear end portion of the arm by an outer mold formed to encompass an outer circumference of the coil, an inner mold formed inside the coil, and a connection mold connecting the outer mold and the inner mold is formed at least part of a surface of a non-effective portion of the coil except for an effective portion arranged to be perpendicular to a direction in which the arm pivots and to face the magnet.

7. The actuator as claimed in claim 6, wherein the connection mold is formed at an entire surface of the non-effective portion of the coil.

8. The actuator as claimed in claim 6, wherein the connection mold is formed in a middle portion along a lengthwise direction of the non-effective portion of the coil.

9. The actuator as claimed in claim 6, wherein the connection mold is formed at at least two positions along a lengthwise direction of the non-effective portion of the coil.

10. The actuator as claimed in claim 6, wherein the connection mold is formed on an upper surface and a lower surface of the non-effective portion of the coil.

11. A suspended actuator of a hard disk drive, having a base plate, that moves a magnetic head to record and reproduce data on a disk to a predetermined position on the disk, comprising:

a pivoting arm on the base plate of the hard disk drive;

a coil, including an effective portion running perpendicular to a pivoting direction and a non-effective portion running parallel to the pivoting direction, carrying current in two directions and coupled to the pivoting arm by an outer mold encompassing an outer circumference of the coil, an inner mold inside the coil, and a connecting mold, connecting the outer and inner molds, at a surface of the non-effective portion; and

magnets normally above and below a part of the effective portion of the coil during operation of the suspended actuator.

12. The actuator as claimed in claim 11, wherein the connection mold is at an entire surface of the non-effective portion of the coil.

13. The actuator as claimed in claim 11, wherein the connection mold is formed in a middle portion along a lengthwise direction of the non-effective portion of the coil.

14. The actuator as claimed in claim 11, wherein the connection mold is formed at at least two positions along a lengthwise direction of the non-effective portion of the coil.

15. The actuator as claimed in claim 11, wherein the connection mold is formed on an upper surface and a lower surface of the non-effective portion of the coil.

16. A hard disk drive, having a base plate, to reproduce data stored in a disk or record data on a disk by using a magnetic head, the hard disk drive comprising:

an actuator including a suspended pivoting arm on the base plate of the hard disk drive supporting a slider on which the magnetic head is mounted; and

a coil, including an effective portion running perpendicular to a pivoting direction and a non-effective portion running parallel to the pivoting direction, carrying current in two directions and coupled to the pivoting arm by an outer mold encompassing an outer circumference of the coil, an inner mold inside the coil, and a connecting mold, connecting the outer and inner molds, at a surface of the non-effective portion; and

magnets normally above and below a part of the effective portion of the coil during operation of the suspended actuator.

17. The actuator as claimed in claim 16, wherein the connection mold is at an entire surface of the non-effective portion of the coil.

18. The actuator as claimed in claim 16, wherein the connection mold is formed in a middle portion along a lengthwise direction of the non-effective portion of the coil.

19. The actuator as claimed in claim 16, wherein the connection mold is formed at at least two positions along a lengthwise direction of the non-effective portion of the coil.

20. The actuator as claimed in claim 16, wherein the connection mold is formed on an upper surface and a lower surface of the non-effective portion of the coil.